

REMARKS/ARGUMENTS

The claims are 2-4. Claim 1 has been canceled in favor of new claim 4 to improve its form. Accordingly, claim 2 which previously depended on claim 1 has been amended to depend on new claim 4. In addition, claim 2 and claim 3 have been amended to improve their form. Reconsideration is expressly requested.

Claims 1-3 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement because in the Examiner's view the limitation in claim 1 "without further mechanical operation" is unsupported by the original disclosure. In response, without conceding the propriety of the Examiner's rejection and in order to expedite prosecution of this case, Applicants have canceled claim 1 in favor of new claim 4, thereby obviating the Examiner's rejection under 35 U.S.C. 112, first paragraph; however, Applicants believe that there is sufficient support for the limitation that previously appeared in claim 1 as the formulation "without reprocessing of the anti-friction coating" and the formulation of "without further mechanical operation" are approximately the same because they are both derived from the German formulation "ohne

Nachbearbeitung" (without subsequent processing/machining) which was used not only in the last paragraph of page 2 but also on page 4 of the specification.

Claims 1-3 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for the reasons set forth on page 2 of the Office Action. In response, Applicants have canceled claim 1 in favor of new claim 4 and have amended claims 2-3 to improve their form. It is respectfully submitted that the foregoing amendment overcomes the Examiner's rejection of the claims under 35 U.S.C. 112, second paragraph, and Applicants respectfully request that the rejection on that basis be withdrawn.

Claims 1-2 were rejected under 35 U.S.C. 102(b) as being anticipated by *Bank et al. U.S. Patent No. 6,312,579*. Claims 1-3 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Arnhold et al. U.S. Patent No. 5,551,782* in view of *Bank et al.* Essentially the Examiner's position is that *Bank et al.* discloses the method recited in claims 1-2 and that *Arnhold et al.* discloses the method recited in claims 1-3 except for the anti-

friction coating being made of an alloy of a harder alloy component and a softer alloy component with the proportion of the softer alloy component in the deposited alloy being increased with increasing coating thickness, that *Bank et al.* discloses this feature, and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide *Arnhold et al.* with the anti-friction coating being made of an alloy of a harder alloy component and a softer alloy component with the proportion of the softer alloy component in the deposited alloy being increased with increasing coating thickness, in light of the teachings of *Bank et al.* in order to provide a desired comformability, embedibility and fatigue resistance.

This rejection is respectfully traversed.

As set forth in new claim 4, Applicants' invention provides a method of producing a workpiece with final dimensions having at least one bearing eye with a bearing eye surface coated with an anti-friction coating made of an alloy of a harder alloy

component and a proportion of a softer alloy component. In accordance with the method, the bearing eye surface is processed to a precise fit to a circular cylinder, and the anti-friction coating is applied to the bearing eye surface following processing in a thickness corresponding to the final dimensions without reprocessing of the anti-friction coating. The preparation of the softer alloy component in the alloy deposited is increased with increasing coating thickness. In this way, Applicants' invention provides a method of producing a workpiece having at least one bearing eye with a bearing eye surface coated with an anti-friction coating that has a comparatively low production cost and ensures a high dynamic bearing load without impairing the service life.

Bank et al. fails to disclose or suggest a coating of a workpiece having a bearing eye with a slide layer but rather a slide bearing composed of two bearing half-shells (10) which must be inserted into a bearing eye. This structure of the slide bearing in *Bank et al.* becomes clear specifically in connection with the paragraph cited by the Examiner (column 2, line 63-65)

because there the rotating mounting of a crankshaft in a connecting rod is discussed. The connecting rod therefore forms the bearing eye into which the slide bearing must be inserted. This slide bearing has a support shell (12) with a bearing metal layer (16) and a multi-layer working layer (24) galvanically deposited onto it. The steel support shell (12) does not have sufficient inherent strength, but rather must be supported in a bearing eye of the workpiece (connecting rod), which requires precise machining of the bearing eye according to a circular cylinder, as is described in *Arnhold et al.* (column 1, lines 40 to 46).

Accordingly, *Bank et al.* fails to disclose or suggest a direct coating of the bearing eye with a slide layer as recited in new claim 4. Neither the support shell (12) nor the bearing metal layer (16) of *Bank et al.* can be viewed as a bearing eye in the sense of Applicants' invention as recited in new claim 4. The bearing of *Bank et al.* consists, in conventional manner, of two bearing half-shells which are able to absorb bearing forces and rest on the workpiece only after they have been inserted into

a bearing eye, for example a connecting rod. Accordingly, *Bank et al.* cannot anticipate Applicants' invention as recited in claim 4.

With respect to the rejection of the claims on the basis of *Arnhold et al.* in combination with *Bank et al.*, the Examiner's position is that the bearing eye of *Arnhold et al.* is machined to a precise fit as can be derived from column 1, lines 40-47; however, it is respectfully submitted that the Examiner has overlooked that the cited paragraph relates to the state of the art to be improved by *Arnhold et al.* because *Arnhold et al.* teaches avoiding the machining to precise fit for insertion of a bearing consisting of two bearing half-shells in that the bearing eye is directly lined with a slide layer. In this connection, reference should also be made to column 2, lines 43-49 of *Arnhold et al.*, for example, where it is explicitly stated that the machining of the bearing eye to precise fit becomes unnecessary due to direct coating of the bearing eye with a slide layer because possible inaccuracies can be balanced out by the bearing metal layer; however, this procedure requires subsequent

processing/machining of the working surface as a person skilled in the art knows, of course, without it having to be explicitly mentioned. Furthermore, direct coating of the bearing eye with a slide layer is a compulsory prerequisite for fractioning of the bearing eye as more specifically recited in Applicants' claim 3 as amended.

Accordingly, it is respectfully submitted that a person skilled in the art cannot derive any reasonable inspiration for Applicants' method as recited in new claim 4 from a combination of *Arnhold et al.* and *Bank et al.* After all, according to *Arnhold et al.*, the machining of the bearing eye to precise fit as required in *Bank et al.* is specifically supposed to be eliminated. In order to be able to make the invention recited in Applicants' new claim 4 obvious, it would have to become evident from the references cited that in the case of the connecting rod according to *Arnhold et al.*, *Bank et al.* provides inspiration to undertake complicated machining of the bearing eye to precise fit, although the slide layer is galvanically deposited directly onto the bearing eye. There of no such indication in *Arnhold et*

al. or in *Bank et al.*

In this connection, Applicants would also like to point out that a bearing eye is, of course, supposed to be shaped according to a circular cylinder, but that a bearing eye is always subject to unavoidable inaccuracies caused by production, so that machining to precise fit is absolutely necessary in order to produce a bearing eye having a sufficient circular cylindrical shape. If no detailed information is provided about a bearing eye in a reference, it is respectfully submitted that a person skilled in the art, familiar with the situation described, will not assume that complicated machining of the bearing eye to a precise fit is present, unless such complicated machining is explicitly pointed out (as in *Arnhold et al.*) or what is involved is bearing eyes for accommodating slide bearing half-shells, which presuppose corresponding precise machining of the bearing eye.

Accordingly, it is respectfully submitted that new claim 4, together with claims 2-3, which depend directly or indirectly thereon, are patentable over the cited references.

Claims 1-3 were also rejected on the grounds of non-statutory obviousness-type double patenting as being unpatentable over claims 1-4 of *U.S. Patent No. 7,178,238* in view of *Bank et al.* Claims 1-3 were also provisionally rejected on the grounds of non-statutory obviousness-type double patenting as being unpatentable over claims 1 and 4-8 of copending *Application No. 10/678,668* in view of *Bank et al.* Claims "1-11" (presumably claims 1-3) were also provisionally rejected on the grounds of non-statutory obviousness-type double patenting as being unpatentable over claims 1 and 4-8 of copending *Application No. 10/678,669* in view of *Bank et al.*

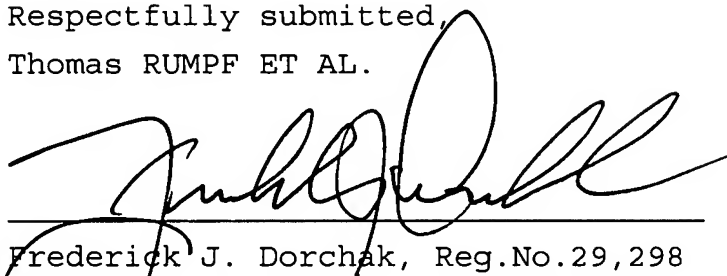
Essentially the Examiner's position was that the claims of the *Rumpf et al '238* patent, the *Ederer et al '668* application and the *Ederer et al. '669* application claim the same subject matter as that recited in claims 1-3 except for specifically claiming that the surface of bearing eye is covered a with an anti-friction coating made of an alloy of a harder alloy component and a softer alloy component and the proportion of a softer alloy component in the deposit alloy being increased with

increasing coating thickness, which were said to be taught by *Bank et al.*

In each of these double patenting rejections, the Examiner refers to *Bank et al.* as rendering the claimed subject matter as obvious over the claims of the respective patent or application; however, *Bank et al.* describes slide bearing half-shells having a multi-layer working layer applied to a bearing metal layer whereby the individual layers have different hardness. In contrast, as stated above, Applicants' invention as recited in new claim 4 uses a direct coating of the bearing eye with a slide layer. Accordingly, it is respectfully submitted that new claim 4, together with claims 1-3, which depend directly or indirectly thereon, are not claiming obviousness variations of the subject matter recited in the claims of *Rumpf et al* '268 patent, the *Ederer et al.* '668 application or the *Ederer et al.* '669 application. Accordingly, it is respectfully submitted that the double patenting rejection should be withdrawn.

In summary, claim 1 has been canceled, claims 2-3 have been amended, and new claim 4 has been added. In view of the foregoing, it is respectfully requested that the claims be allowed and that this application be passed to issue.

Respectfully submitted,
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